U.S. Number 2 Yellow Corn Versus Specialty Corn: A Producer's View

Honor's Project

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Introduction

There is great concern among corn producers; low corn prices are creating a desire to find ways to improve farm income. Public concern is causing genetically modified varieties, like Roundup Ready and Liberty Link, to be reexamined for continued production. Yet, there are varieties that should be able to withstand the pressures of downward prices and public concern over genetic manipulation. White corn, food grade corn, high oil corn, and waxy corn are a few of the types of corn that have been developed through breeding to help meet the needs of specific consumer and processor demands. These specific demands are helping to increase the value of these traits. The increased value of the traits helps to provide the producer with additional income for producing a crop with these valuable traits.

Specialty corn production can be very appealing to the average corn producer. Higher prices are paid for essentially a different variety of corn. However, there is more to producing specialty corn production than using another variety of seed at planting. Additionally, there is more to specialty corn than just being another variety. The unique nature of specialty corn varieties requires a different approach to the production of this corn. This has been the focus for agronomists. Marketing and other financial issues to producing specialty corn versus the traditional counterpart have been the focus for economists. This paper will look to both agronomics and economics for insight for the producer.

Specialty corn production should not be viewed as breaking away from traditional corn production. Traditional corn production does not have to be concerned with the difficulties of unique traits of the specialty varieties. Many of the necessities to producing a quality traditional corn crop are carried over to producing a successful specialty corn crop. Machinery for corn production remains the same for both, although the details of use change. Marketing can be similar for both traditional and specialty, but specialty corn usually requires the use of contracting. The significant point to be learned is that specialty corn is another type of corn that needs special attention for success.

Specialty corn has the potential for opportunity in the future. The future could provide for types of corn with pharmaceutical uses, or improved feed for livestock to reduce the concerns of too much manure. Another future potential might be improved kernels for use by processors for products like high fructose corn syrup and ethanol. Corn can be modified or bred to have the traits desired by processor and consumers. Ohio producers should be very aware of the potential of specialty corn production. Currently, there are modifications to the proportions of the components of the kernel. By producing specialty corn, now a producer can be prepared for the potential for higher value specialty corn in the future. For now, producers should be interested in producing specialty corn to improve income on the farm without investing in special machinery or structures. A producer interested in specialty corn production should ensure a market exists in the area. If there is no convenient market, the premium may be offset by high transportation costs.

U.S. Number 2 Yellow Corn

U.S. Number 2 Yellow Corn is the commodity with which most producers are familiar. Producers are familiar with the needs and requirements for producing the maximum yield. Producers have also familiarized themselves with the marketing and other financial aspects necessary for the health of their operation. U.S. Number 2 Yellow Corn, traditional corn, is also used as a standard for non-producers, such as elevators and boards of trade, which use it as a benchmark for pricing. Traditional corn has been the focus of most researchers and breeders for much of this century. Recently, much emphasis is focused on the new genetically modified hybrids.

Producing traditional corn has been a foundation of many farming operations in the Midwest. Research has been primarily conducted to improve the yield and performance of traditional corn. So, producers are entering into production of specialty corn without considering that there are differences among types of corn.

The demand for specialty corn is increasing. This demand is coming from processor and consumer demand for specialized products. As the demand for specialized products continues to increase, the desire to use the commodity grain lessens. Specialty corn is becoming favored in livestock production, for efficiency and cost savings, as well as for the aforementioned processors and consumers.

Agronomics

When producing a specialty crop, several elements must be taken into consideration. These include examining issues that relate to the production of the crop in the field. Specialty corn production creates new challenges to the traditional corn producer. Pfister Hybrids has a list of areas that should be reviewed before producing their line of high oil corn, SuperKernoil.

1. Seed Selection
2. Site Selection
3. Crop Rotation
4. Isolation
5. Seedbed Prep
6. Planter Prep
7. Plant Populations
8. Planting Date
9. Emergence
10. Fertility
11. Insect Management
12. Pollination

Producing a quality specialty corn crop takes an understanding of the special needs of the type of corn being grown. Additionally, knowledge of the marketing and financial issues is needed to maximize the return to the farm both in yield and in dollars.

TC Blend

Many varieties of high oil corn utilize a production system developed by Optimum Quality Grains, the TOPCROSS Blend (TC Blend). TC Blends use two separate varieties; an 'elite' male sterile hybrid, the grain parent, and the pollinator hybrid. The male sterile grain parent represents 90 to 92 percent of the seed, while the pollinator comprises the remaining 8 to 10 percent of the seed. The male sterile component is bred to produce high yields, while the pollinator provides the genetic material necessary to produce the high oil trait. With such a low proportion of pollinators, maintaining proper field conditions is essential for producing a successful crop. Thomison identified nine keys to producing a successful TC Blend crop in "Topcross High Oil Corn Production: Management Considerations". These nine keys to proper TC Blend management are:

1. Select field sites with high yield potential for TOPCROSS corn production.
2. Use crop rotations.
3. Isolate TC BLEND fields from normal yellow dent corn.
4. Select TC BLENDS best adapted to your growing conditions.
5. Prepare a seedbed that will promote uniform seed emergence and crop development.
6. Increase seeding rates.
7. Plant early to optimize oil yields.
8. Scout fields for potential pest problems throughout the growing season.
9. Segregate TOPCROSS grain to preserve its "identity" and maximize oil premiums.

Although there are a limited number of pollinators in TC Blend crops, they can be successfully produced. For the producer to maximize production of TC Blend crops, careful planning and using the best agronomic practices is important.

Yield Drag

Specialty corn contains a unique or improved trait that changes the composition of the kernel. Changing the composition of the kernel can affect the amount of production per plant and the amount of production per acre. Taking yield drag into consideration is important to properly compare specialty corn to traditional corn. Lower yields need the added value from premiums to offset the lost income from the lost yield.

To more effectively illustrate the lost yield, look to the findings of the 1997 and 1998 High Oil TC Blend Performance Tests at the Ohio State University. In the 1997 test, high oil corn yielded averages of 18 and 20 bushels per acre lower that the respective check plots. In 1998 the averages were about 8 and 18 bushels per acre lower than the check hybrids. (Thomison & Geyer 1997 & 1998) So, it is important for producers not to overlook the yield drag of the specialty corn hybrids.

Isolation

The pollen shed by the tassel provides half of the genetic material required to produce one kernel of corn. The pollen of specialty corn is no different; it is needed to pass on the trait to the next generation. However, specialty corn is corn so any corn pollen will produce a kernel, which can cause the specialty corn to become contaminated. This means there is a decrease in the amount of the crop that is actually the specialty corn. Yet, current information provided by seed companies suggests that isolation of their specialty corn is not required. Seed companies recommend that to produce a quality crop, the seed should be planted in large blocks. The seed companies explain then, that any stray pollen in the border rows will blend into the rest of the field providing the desired trait over the average of the field. This recommendation by the seed companies seems to go against the necessities required to produce an identity preserved crop.

The necessity is that as little stray pollen as possible should enter the field, to prevent contamination of the specialty corn. Current concern with genetically modified organisms (GMO) should make producers aware of the problems that could occur if cross-pollination were to occur. Some contracts or elevators may have rejection policies if any GMO grains are found in a sample. An additional concern should be with contamination of another specialty corn type that could make the planted crop less valuable. Contracts may also specify that contamination of any other corn type is grounds for rejection. Isolation

should be taken into consideration to ensure that the producer can obtain the maximum value for the grain.

Marketing & Financial Issues

Specialty corn production can provide added value to corn production. This added value can then improve the price received by the operator and the bottom line of the operation. For an illustration of this refer to Table 2. Specialty corn production is appealing to the producer because it is a value added crop that can be produced by most producers with little increase in costs. The machinery needed to produce specialty corn is the same as is required to produce traditional corn. Many marketing techniques can be used on pricing the specialty corn. However, the producer faces the use of contracts, premium calculations, and preserving the identity of the grain.

Contracting

To fully gain the price advantage of specialty corn, contract production is most often utilized. Contract production for specialty corn generally comes in two formats: marketing contracts or production contracts. Marketing contracts are used for the sale of the crop; these are generally for a predetermined number of bushels. Marketing contracts generally do not place any restrictions upon the production of the crop. However, with public concern over Genetically Modified Organisms (GMO), acceptance of specialty corn crops that may have been genetically modified may become limited. Production contracts are for a producer to grow a specialty corn for the processor, exporter, or livestock producer. This type of contract may specify which varieties, pesticides, and other management practices may be used.

Contracts are usually new to commodity grain producers and these producers could be signing a contract that is not in their best interest. To alert producers of the advantages and disadvantages of contracting, the Ohio Farm Bureau Federation has prepared a publication entitled "Crop Contracting Considerations"(Appendix A). Highlighted advantages include price premiums, access to new technology, market availability, reduced financial risk, and reduced marketing risk. The disadvantages to contracting that were outlined were possible loss of producer control. Other issues presented were risk of not being paid, possible yield drag of specialty varieties, long term investments/ short term contracts, limited producer returns, and identity preservation. Contracting requires a careful understanding of all the issues that are listed on the contract,

and knowledge of when items are missing from the contract that protect the best interests of the producer. Contracting is gaining in popularity with producers as they increase their acreage of specialty corn.

Producer benefits are highlighted in the following paragraphs. A benefit to the producer is a higher price through premiums; this is usually the most obvious benefit to contract production. The producer is raising a special crop that has added value; this added value is from the demand for the special trait of the crop. Special care is taken by the producer to preserve the identity of the crop and the trait of the crop, as well as maintain high quality levels. Compensation for extra attention in producing a specialty crop is returned to the producer in the premiums that are paid.

Producers under contract often have access to the newest in technology. This technology could be either unavailable or undesirable for the producer if not in a contracting situation. Often the company will contract the production to limit access to the crop. New technology may be undesirable to a producer that does not contract because of prohibitive costs or limited market access.

A producer under contract will have access to markets that would have been unavailable or difficult to enter as an independent producer. Livestock producers are using specialty grains to provide a better diet for their animals while lowering costs. Food processors are looking for a consistent quality in the grain they buy, and others are looking for a specific trait as well. Niche markets tend to desire the type of quality products that are produced under contract.

These are markets that may be difficult to enter or even completely inaccessible to the non-contract producer.

Producers using contract production lessen their financial risk. Price decline is the principal type of risk assumed by producers. Setting a price in advance or having a price premium on the grain reduces the risk of price decline. Producers are also able to reduce their marketing risk because many of the marketing decisions are made in advance or are listed in the contract. Marketing decisions that are often established in contracts include the delivery point, delivery time, price, and potentially more decisions.

Next, the producer should be aware of the following risks. The contract producer faces several risks when growing a crop under contract. These risks include nonpayment, lessened control over management decisions, long-term investments for short-term contracts, and identity preservation.

As in any situation, there is a risk of not being paid for work that has been done or crops that have been delivered. The contract should be clear on what options are available to the producer if the contractor is unable to pay for the crop that was grown and delivered.

Management decisions may be made by the contractor instead of the producer. Some agronomic decisions such as tillage practices and fertilizer and pesticide use and application can be affected by contract production. Field inspection may be required in the contract to ensure that proper management practices have been used. Some producers may be unwilling to relinquish their

decision making authority, or to allow access to their fields for the contractor's right to inspection.

Some contracts require the producer to store the specialty crop for a period of time. This period of time may be from one month to nine months. For producers that do not have a grain bin for this purpose one will need to be constructed. The construction of a bin will, for most producers, require a long-term loan. A production contract is usually only for one production year. This leaves an opportunity for risk; the contract is for a shorter term than the loan for the grain bin. Any other new equipment purchased for contract production is also an assumption of risk by the producer. This could have great importance if either party does not renew the contract. A contract producer would be left with a debt for a crop that is no longer grown.

Identity preservation is a key to specialty grain production; the specialty grain must be almost completely free of commodity grains. Contamination of commodity grain in specialty grain will make it less desirable and lower its market value. This means the producer must maintain isolation of the specialty grain fields and proper and thorough cleaning of all handling and harvesting equipment is needed to maintain identity preservation.

Identity Preservation

Specialty corn needs care and planning to preserve the special trait of the crop. Identity preservation (IP) is a concern for both the agronomic and economic sides to any operation. Although IP is discussed under contracting, those producers that do not contract should be aware of the necessity of maintaining crop identity. Specialty corn needs to be kept separated from traditional corn and other types of specialty corn to prevent contamination. Specialty corn has a unique set of traits; mixing different types of corn in field production or storage results in the loss of the special trait. When the trait of the corn is lost, all added value of that trait is lost as well. So, when the value of the trait is lost, all value that the producer would receive is lost. Yet, the producer of IP crops is not without new or additional costs. Construction of a new bin, can cost over $5000. Also, there are the costs of ensuring that contamination does not occur. The costs of cleaning machinery and bins will vary from operation to operation.

Producers will need to institute protocols to ensure there isn't any other type of corn in the machines of production. Planters need to be cleaned out before planting a specialty corn to prevent contamination from other types of corn in the field. Combines and wagons need to be cleaned to ensure that there are no remnants remaining to contaminate the specialty corn being harvested. Additionally, storage and handling facilities must be cleaned to prevent further contamination of the grain. All steps necessary to ensure that the specialty corn crop is free from contamination will cost the producer in time. This will add to the expenses of the producer to maintain the cleanliness needed for IP. Identity

preservation is then a process that requires advanced planning to ensure that the crop maintains the value added trait, and that the producer can capture the added value.

Premiums

An obvious benefit to the production of specialty corn is the added income from the premiums for the sale of the grain. The use of premiums brings the added value of the specialty corn to the producer. Premiums vary by the type of specialty corn that is produced and the quality of that grain. Premiums can be found in the use of contracts, or in some situations without contracts. A small addition to the price of a bushel may not seem like much but consider the following situation. A producer is preparing to plant a specialty corn that has a premium of 25 cents per bushel and will be producing 150 bushels per acre. In the preceding situation the producer would be gaining an additional $37.50 per acre. This can be a great increase to the total returns per acre. For example, if an operation's returns to traditional corn were $80 per acre, specialty corn would increase this number by 47 percent. In Table 1, there is a description of the premiums offered for high oil corn in the 2000 crop year. The premiums shown in Table 1 are the actual numbers obtained from Optimum. The premiums are declining as the number of acres of specialty corn rises. In 1992, there were approximately 50,000 acres of high oil corn grown in the U.S. By 1999 that number had grown to over one million acres (Thomison, 1998).

TABLE 1

OPTIMUM QUALITY GRAINS 2000 PREMIUMS FOR HIGH OIL CORN EXPORT MARKETING AGREEMENT

OIL CONTENT	HARVEST DELIVERY	BUYERS CALL
<6.0%	$0.00	$0.00
6.0%	0.00	0.05
6.1%	0.01	0.06
6.2%	0.02	0.07
6.3%	0.03	0.08
6.4%	0.04	0.09
6.5%	0.05	0.10
6.6%	0.06	0.11
6.7%	0.07	0.12
6.8%	0.08	0.13
6.9%	0.09	0.14
7.0%	0.10	0.15
7.1%	0.11	0.16
7.2%	0.12	0.17
7.3%	0.13	0.18
7.4%	0.14	0.19
7.5%	0.15	0.20
7.6%	0.16	0.21
7.7%	0.17	0.22
7.8%	0.18	0.23
7.9%	0.19	0.24
8.0%	0.20	0.25
>8.0%	0.20	0.25

OIL CONTENT EXPRESSED AS ZERO PERCENT MOISTURE BASIS

SOURCE: OPTIMUM QUALITY GRAINS

Conclusion

Specialty corn has great potential for many producers in Ohio. By producing specialty corn, producers can help to increase farm income. The requirements of producing specialty corn crops can be used by the producer to prepare for crops that may contain a very high valued trait. Assuming that all costs remain the same, Table 2 illustrates the gains or losses that can be incurred in producing high oil corn. Table 2 shows that high oil corn can increase the income of the operation in some circumstances. Increases in costs to the producer will need to be factored into the numbers included in Table 2.

Using a fictional farm for illustration, I would recommend planting at least one type of specialty corn to compliment traditional corn production. Before planting a specialty corn, it is important to ensure a market for the specialty corn. In contracting, it is important to ensure both parties are equally protected in all issues. By contracting, a market is established and premiums are established. Contracts that I would avoid in this situation include those that have excessive penalties for breech, lack of detail for payment provisions, and I would try to avoid contracts for bushels delivered instead of acres grown. So, for operations wishing to increase income, a specialty corn may allow the operation to achieve this gain. U.S. Number 2 Yellow Corn may not be obsolete yet, but specialty corn has many enticing benefits to producers.

TABLE 2

Revenue Comparison of Normal Corn & High Oil Corn

	Yield	Price	Premium	Per Acre	Gain/ Loss	Break Even Premium
Normal						
	140	$2.60	$0.00	$364.00	N/A	N/A
HOC						
100%	140	$2.60	$0.20	$392.00	$28.00	$0.000
95%	133	$2.60	$0.20	$372.40	$8.40	$0.137
90%	126	$2.60	$0.20	$352.80	($11.20)	$0.289
85%	119	$2.60	$0.20	$333.20	($30.80)	$0.459
80%	112	$2.60	$0.20	$313.60	($50.40)	$0.650
75%	105	$2.60	$0.20	$294.00	($70.00)	$0.867

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Optimum Quality Grains / Consolidated Grain & Barge, "2000 Export Marketing Agreement, Harvest Delivery"

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Appendix A

Crop Contracting Considerations

OHIO FARM BUREAU

Crop Contracting Considerations

Due to increasing breakthroughs in biotechnology and consumer demand for products with specific characteristics we are experiencing an emerging and growing interest in producing agricultural products with highly specialized traits. Producing and marketing such higher value crops as high oil corn, food grade soybeans or waxy corn are not without risk and require additional compensation to the producer. Gaining access to the technology and markets necessary to raising these specialized varieties can be difficult for an independent producer. One alternative to independent production and marketing are contracts offered by several companies to producers for the production of these specialty and identity preserved grains and oilseeds. These contracts pose both advantages and disadvantages to the producer and should be clearly understood before being entered.

This document provides basic information to assist producers who may be considering the use of these specialty or identity-preserved grain and oilseed contracts.

Advantages of Contracting

Contracting can have benefits for the producer that include price premiums, market availability, and access to new technologies. Yet, as farmers differ in their knowledge, ability, and desire to take on risk, the benefits to contracting differ as well. Some of the advantages may not be applicable to all farms in all situations. It is then clear that contracting may be well suited for some farms, and not feasible for others.

Price Premiums	The most obvious advantage to the contract producer is the premium received for the specialty grain. The premium received varies by the type of specialty grain, and by the quality of the grain. The premium is in place to encourage the production of the specialty grain for the contractor.
Access to New Technology	Some contracts specify the use of new hybrids or a new type of specialty crop, giving the contract producer access to the latest technologies.
Market Availability	Contracts provide producers with a secure market for their specialty grain. These markets may include livestock producers, food processors, industrial companies, and export opportunities.
Reduced Financial Risk	The possibility of lower prices is one type of risk for the producer. This risk can be reduced in the contract through establishment of a premium or flat price.
Reduced Marketing Risk	The risks of marketing can be reduced with a contract. When a contract is signed many marketing decisions will be made at that time, including delivery point, delivery time, price and possibly more.

Ohio Farm Bureau Federation

For more information contact
Constance Cullman Jackson or Jim Chakeres
Ohio Farm Bureau Federation
(614) 249-2400

September 1999

Disadvantages of Contracting

Although contracts can benefit the producer, contracts are not without drawbacks. The drawbacks of contracting may derive from contract clauses unduly favoring one party over another or performance variations of the specialty crop grown. When considering a contract the premium should be able to cover all losses or additional costs caused by the disadvantages.

Possible Loss of Producer Control:	Specific hybrids, tillage practices, pesticides, and drying and storage practices may be either required or prohibited, in contracts requiring modified production practices. Other producer controlled decisions may be affected by the contract such as storage length and delivery date, delivery location, and some contracts may allow for field inspection by the contractor.
Risk of Not Being Paid	Like all companies, there is no guarantee the company with which you are signing a contract will be able to make the payment(s) required in the contract.
Possible Yield Drag of Specialty Varieties	The new specialty varieties may have up to a fifteen percent yield drag versus conventional varieties, affecting the producer's ability to deliver quantity. They may also require special management to obtain the best results for these varieties.
Long Term Investments/ Short-Term Contracts:	A short-term contract may specify special handling or storage practices that require a long-term investment by the producer.
Limited Producer Returns	Most contracts set a price for the specialty grain. Unless the price set is market plus premium there is little opportunity to capture upside price swings. Preset prices and payments per acre are good ways to reduce the risk of downward price movements, however it also restricts the gains of upward price movements
Identity Preservation	When growing specialty crops under contract the grain must be kept separate from commodity grain. Harvesting and handling machinery must be thoroughly cleaned to ensure purity. Specialty corn needs to be isolated in the field to prevent pollination from commodity corn, and subsequent lowering of the desired trait.

Additional Considerations for Contracting

Producers should be aware that a contract is a legally binding document and that it should be fully understood before signing. Following are just a few of the considerations that should be addressed before signing the contract.

- Is the contract for acres planted or bushels delivered?
- If acres planted, is there a maximum bushels per acre allowed? What can be done with the overages in this situation?
- What is done if crop does not meet minimum contractor guidelines? Can the grain be sold as the commodity grain or can it not be sold at all?
- Is special equipment or are special facilities required for this crop? If you need to make an investment is there enough gain to make the payments?
- Who owns the crop? When does the crop transfer from producer to contractor?
- Is crop insurance required by the contract?
- Who is responsible for "Acts of God" that destroy the crop?
- What is the contractor's policy on contract renewal?
- Are there penalties if the producer terminates the contract? What occurs if the contractor terminates the contract?
- What happens if the contractor suffers insolvency/bankruptcy?
- How does the contract affect participation in Federal programs?
- What if the delivered bushels fail to meet the quantity requirement?
- If the land is rented or leased is landlord approval required for the contract?

Appendix B

Optimum Quality Grains, LLC
2000 Export Marketing Agreement
Harvest Delivery

Sample Contract

SAMPLE SAMPLE SAMPLE SAMPLE SAMPLE

Contract Number: **#CONTRACT ID**
Originator: **OriginFName OriginLName OriginatorPhone OriginatorCompany**
Program: **Optimum Quality Grains, L.L.C. /Consolidate Grain and Barge**

Optimum Quality Grains, L.L.C.

2000 EXPORT MARKETING AGREEMENT

FOR OPTIMUM® HIGH OIL CORN

Harvest Delivery

THIS AGREEMENT is made **DATE** between **GrowerDisplayName** (hereinafter "GROWER") and Optimum Quality Grains, L.L.C. (hereinafter "OPTIMUM"), and relates to the production and delivery of OPTIMUM® High Oil corn grain (hereinafter "OPTIMUM GRAIN") from certain High Oil hybrid seed corn or TC BLEND® seed corn (hereinafter collectively "HOC SEED"). GROWER and OPTIMUM are experienced and knowledgeable in the cultivation of corn and business transactions involving corn.

1. GENERAL TERMS

a. GROWER shall produce and deliver an "Identity Preserved" crop from HOC SEED purchased from seed companies that are on the 2000 OPTIMUM HOC SEED company list (see Attachment A).

b. GROWER shall produce the highest quality grain possible and meet the specifications in Article 3. GROWER shall take all measures to prevent contaminants during growing and handling OPTIMUM GRAIN, and may not blend with non-OPTIMUM GRAIN.

c. GROWER agrees to sell and deliver 100% of the contracted production of OPTIMUM GRAIN to **ELEVATORNAME** (hereinafter "ELEVATOR"). All marketing activities and GROWER payments will be handled by the ELEVATOR or a replacement elevator or grain merchandiser designated by OPTIMUM and shall be subject to a separate grain purchase agreement between GROWER and ELEVATOR.

d. GROWER agrees to plant and grow **TOTALQuantity** acres of OPTIMUM GRAIN. Pricing and GROWER compensation for the OPTIMUM GRAIN are in Article 4. If GROWER is unable to perform all terms of this Agreement for any reason, GROWER agrees to promptly notify both OPTIMUM (1-888-707-7648) and ELEVATOR.

e. GROWER will purchase

SEEDCOMPANIES

* Seed company name is required for the Agreement to be valid. If GROWER purchases seed from seed company(s) other than as designated above, whether due to unavailability of seed or GROWER'S choice, or is unable to purchase seed in order to perform this Agreement, GROWER agrees to promptly notify OPTIMUM by calling 1-888-707-7648. Neither OPTIMUM nor any seed company designated above guarantees seed availability or sale.

f. GROWER is to request and read the specifications and the complete Purchase Agreement and the

Limitation of Warranty and Liability associated with all HOC SEED purchased for use under this Agreement. GROWER agrees to abide by the terms and conditions of the Purchase Agreement.

g. GROWER grants OPTIMUM and/or its appointed agents free and easy access to the fields to inspect, evaluate and monitor the progress and condition of the crop.

h. GROWER agrees not to use any grain storage chemicals - either applied directly to the OPTIMUM GRAIN or to the storage structure in which the OPTIMUM GRAIN is to be stored, and GROWER further agrees to certify compliance with this provision.

i. To minimize risk of cross-pollination, GROWER agrees that he will not plant HOC SEED within 50 feet of any transgenic or GMO (genetically modified organism) corn; and GROWER further agrees to certify his compliance with this provision.

j. For purposes of this agreement, "transgenic or GMO (genetically modified organism) corn" refers to a crop produced from seed containing DNA from another organism; e.g., Bt-derived insect resistance, Roundup Ready ® or Liberty Link ® herbicide resistance, etc.

2. DELIVERY

a. GROWER shall deliver the OPTIMUM GRAIN to ELEVATOR with transportation costs paid by the GROWER. For OPTIMUM GRAIN redirected by OPTIMUM to another facility, that receiving location on behalf of OPTIMUM will pay additional transportation costs.

b. GROWER agrees to deliver their production of OPTIMUM GRAIN directly from the field or from their temporary storage to the ELEVATOR as soon after harvest as possible. GROWER will provide ELEVATOR a minimum one week pre-advice of the requested delivery dates.

3. PHYSICAL QUALITY SPECIFICATIONS

OPTIMUM GRAIN shall meet the following specifications, or it shall be subject to the ELEVATOR'S discount schedule or rejection.

a. The specifications for OPTIMUM GRAIN shall be:

Moisture	15.0% Maximum
Test Weight	54.0 lbs. Minimum
BCFM	2.0% Maximum
Damage	3.0% Maximum
Aflatoxin	< 20 ppb
Odor	Cool, sweet and of merchantable quality.
Contamination	For identity preserved handling, no corn grain from other types allowed and meets all U.S. No. 2 Yellow Corn quality standards not listed above.
Blending	OPTIMUM GRAIN blended with any non-OPTIMUM GRAIN will not be accepted.

b. If the moisture exceeds the above limits or has test weight less than the above minimum, the OPTIMUM GRAIN will be subject to rejection or discounts, and drying charges set forth by the receiving ELEVATOR. The following discounts apply for BCFM and damage.

BCFM DISCOUNTS	DAMAGE DISCOUNTS
$0.02 Each 1.0% From 2.1-4.0%	$0.01 Each 1.0% From 3.1-5.0%

c. OPTIMUM GRAIN delivered under this Agreement shall be of merchantable quality, unadulterated and unrestricted from movement in interstate commerce within the meaning of the Federal Food, Drug, and Cosmetic Act, Environmental Protection Agency Tolerances, the United States Grain Standards Act and applicable state law.

d. Any individual load of OPTIMUM GRAIN with greater than 20 PPB Aflatoxin, not cool and sweet, not of merchantable quality or rejected as a result of not meeting any of the specifications in this Agreement shall not be accepted and no premium will be paid for oil content. Such load(s) shall be subject to rejection or purchased as yellow corn at the sole discretion of the ELEVATOR. Such load(s) shall not be commingled with other OPTIMUM GRAIN produced by GROWER.

e. The ELEVATOR'S weights and grades shall govern with the exception that GROWER has the right to appeal any grading by having the elevator submit a sample to the Federal Grain Inspection Service (FGIS), at GROWER'S expense, for an official grade.

f. GROWER will provide a representative sample of GROWER'S OPTIMUM GRAIN before delivery if requested by OPTIMUM. OPTIMUM will provide sample bags and sample shipping instructions to the GROWER. OPTIMUM or their representative shall have the right to sample bins of OPTIMUM GRAIN prior to delivery.

4. PRICING AND GROWER COMPENSATION

a. The ELEVATOR or OPTIMUM will compensate the GROWER for performing this Agreement. The compensation for a load of delivered, dried OPTIMUM GRAIN shall be the ELEVATOR cash price for U.S. No. 2 Yellow Corn, basis the export market for commodity corn on day of delivery (if not priced earlier with ELEVATOR), less any discounts, plus a premium based upon the oil content (see the SCALE below) times the total number of net bushels of the OPTIMUM GRAIN delivered. GROWER acknowledges that depending upon market conditions, the pricing of OPTIMUM GRAIN may be higher or lower than the local price of generic yellow corn. The GROWER agrees to accept this export price as the final determination in the settlement of the OPTIMUM GRAIN.

PREMIUM SCALE

6.0% oil or less*, $0.00 per bushel

6.1% oil $.01 per bu.	7.1% oil $.11 per bu.
6.2% oil $.02 per bu.	7.2% oil $.12 per bu.
6.3% oil $.03 per bu.	7.3% oil $.13 per bu.
6.4% oil $.04 per bu.	7.4% oil $.14 per bu.
6.5% oil $.05 per bu.	7.5% oil $.15 per bu.
6.6% oil $.06 per bu.	7.6% oil $.16 per bu.
6.7% oil $.07 per bu.	7.7% oil $.17 per bu.
6.8% oil $.08 per bu.	7.8% oil $.18 per bu.
6.9% oil $.09 per bu.	7.9% oil $.19 per bu.
7.0% oil $.10 per bu.	8.0% oil $.20 per bu.

*All oil contents are expressed on a zero moisture basis

b. In addition DUPONT is offering a GROWER profit incentive of $15 per bag on each bag of TC BLEND® seed you buy from participating OPTIMUM HOC seed companies. To qualify for the 2000 DuPont Bonus Program, grower must utilize qualifying DuPont Crop Protection Products on 50% or more of their total corn acres. For additional information on this incentive, call 1-888-6-DUPONT.

c. Oil content of OPTIMUM GRAIN shall be determined by the ELEVATOR, utilizing a grain analyzer with an OPTIMUM approved calibration for OPTIMUM GRAIN, on a representative sample drawn from each load. Details of the sampling and measurement procedure may be obtained from the ELEVATOR.

d. In the event of a disagreement or dispute related to oil content, the GROWER may request that such sample be re-analyzed. The oil content for determining the premium due shall be the average value of the two sample measurements. If the GROWER requests a third party analysis, then GROWER has the right, at GROWER'S expense, to have ELEVATOR submit the same sample to the Federal Grain Inspection Service (FGIS). The parties agree that the oil content as determined by FGIS shall be used to determine the premium for the OPTIMUM GRAIN.

e. If a grain analyzer with an OPTIMUM approved calibration for OPTIMUM GRAIN is not available at the ELEVATOR when the GROWER delivers the OPTIMUM GRAIN, then GROWER shall allow ELEVATOR reasonable time to obtain oil analysis.

5. INDEPENDENT CONTRACTOR

GROWER is, for purposes of this Agreement, an independent contractor and nothing contained in this Agreement shall make GROWER an employee or agent of OPTIMUM or ELEVATOR or authorize him/her to act on behalf of OPTIMUM or ELEVATOR. GROWER shall indemnify, defend and hold OPTIMUM or ELEVATOR harmless from all claims in any way connected directly or indirectly with GROWER'S operations pursuant to this Agreement.

6. DISCLAIMER OF WARRANTY AND LIMITATION OF DAMAGES

Actual total oil content of the OPTIMUM GRAIN produced by the GROWER will vary and is influenced by factors such as variety selected, date of planting, occurrence of disease, insects including corn rootworm beetle, accumulated growing degree days during the growing season, contaminating pollination by non-high oil corn varieties, failure to follow the recommended method of use, and the breakdown of male sterility of the hybrid seed corn incorporated in the TC BLEND® seed under adverse weather conditions, all of which are beyond the control of OPTIMUM. **OPTIMUM MAKES NO WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER EXPRESS OR IMPLIED WARRANTY.**

NO CLAIM OF ANY KIND, WHETHER OR NOT BASED ON NEGLIGENCE, SHALL BE GREATER IN AMOUNT THAN THE VALUE OF COMMERCIAL SEED IN A QUANTITY COMPARABLE TO THAT QUANTITY OF SEED SUBJECT TO THIS AGREEMENT. NEITHER PARTY SHALL BE LIABLE FOR SPECIAL, CONSEQUENTIAL, PUNITIVE, EXEMPLARY, OR INDIRECT DAMAGES AND THE MEASURE OF DAMAGES SHALL BE WITHOUT REGARD TO THE CAUSE RELATIVE THERETO AND WHETHER OR NOT CAUSED BY OR RESULTING FROM THE NEGLIGENCE OF SUCH PARTY.

7. MISCELLANEOUS

a. This Agreement constitutes the complete and exclusive statement of the understanding between the parties and supersedes all prior and collateral representations. Any alteration, modification, or amendment of the Agreement shall not be valid and binding unless in writing and signed by both parties. This Agreement shall bind parties hereto, their heirs, administrators, executors, successors, and assigns.

b. This Agreement shall be governed by Iowa law, without regard to conflict of law principles. OPTIMUM and GROWER agree that all disputes and differences arising between OPTIMUM and GROWER out of or relating in any way to this Agreement, the construction, meaning and operation, or effect of this Agreement, or breach thereof, shall be settled by arbitration in accordance with the rules and regulations of the National Grain and

Feed Association pursuant to such Association's grain arbitration rules. OPTIMUM and GROWER agree that judgment may be entered upon any arbitration award in any court of competent jurisdiction.

c. Neither OPTIMUM nor the GROWER may assign this agreement without prior written consent of the other party. Written notice to OPTIMUM shall be by personal delivery or by postage paid letter addressed to Optimum Quality Grains, L.L.C., 4601 Westown Parkway, Suite 200, West Des Moines, IA 50266.

8. LAND OWNER

If GROWER does not own a field used for the production of the OPTIMUM GRAIN under the terms of this Agreement, he/she shall indicate the name(s) of the owner(s) below. Any method of payment other than directly to GROWER shall be indicated below.

9. ACCEPTANCE BY OPTIMUM and ELEVATOR'S RIGHT OF REFUSAL

This Agreement is not binding until signed by both GROWER and OPTIMUM. GROWER must present this Agreement to ELEVATOR for OTPIMUM to sign.

ELEVATOR reserves the right, at its sole discretion, to refuse to accept this Agreement from GROWER prior to its being signed by OPTIMUM. If ELEVATOR chooses to exercise this option, ELEVATOR will notify GROWER that GROWER'S offer to produce OPTIMUM GRAIN has been rejected.

OPTIMUM QUALITY GRAINS, L.L.C.:

By:

_____Date:_____

GROWER:

By:

_____Date:_____
GROWER (signature)

When filling out the information below please PRINT CLEARLY with a ball point pen:

Grower Name: **GrowerDisplayName**

Company Name (if any): **CompanyDisplayName**

Street or box number: **ADDRESS1, ADDRESS2**

City, State, Zip Code, Phone: **CITY, STATE PostalCD, PHONE**

**Complete, legible name and address required for Agreement to be valid.

NON-OBJECTION BY LANDOWNER(S):

By:

_____
LANDOWNER

_____
ADDRESS/TOWN

* Optimum® is a registered trademark of Optimum Quality Grains, L.L.C.
* TC BLEND® is a registered trademark of Optimum Quality Grains, L.L.C.

Version: Version

Attachment A

OPTIMUM® HIGH OIL CORN

SEED COMPANY LIST FOR 2000

Ag Venture, Inc.
AgriGold
Agripro Seeds, Inc.
Asgrow
Beck's Superior Hybrids, Inc.
Bo-Jac Hybrid Corn Co.
Brown Seed Farms, Inc.
Burrus Bros. & Assoc. Growers
Cargill
Callahan Seeds
Croplan Genetics
Crows Hybrid Corn Company
DeKalb Genetics Corporation
Diener Seeds, Inc.
Garst Seed Company
Golden Harvest/Garwood
Golden Harvest/Golden Seed Co.
Golden Harvest/JC Robinson Seed Co.
Golden Harvest/Sommer Brothers
Golden Harvest/Thorp
Great Lakes Hybrids
Growmark, Inc.
Gutwein, Fred & Sons, Inc.
Hawkeye Hybrids, Inc.
Hoblit Seed Co.
Hoegemeyer Enterprises, Inc.
Horizon Seed Genetics
Hughes Hybrids
L. G. Seeds, Inc.
Legend Seeds, Inc.
Lewis Hybrids, Inc.
Mark Seed Company
NC+ Hybrids
Novartis Seeds, Inc.
Patriot Seeds, Inc.
Pfister Hybrid Corn Company
Pioneer Hi-Bred International, Inc.
Prime Farm Seeds, Inc.
Producers Hybrids, Inc.
Sand Seed Service
Schlessman Seed Co.
Seed Consultants
Select Seed Hybrids, Inc.
Sieben Hybrids, Inc.
Stewart Seeds, Inc.
Stone Seed Farms, Inc.
Top Farm Hybrids
Trelay Farms, Inc.
Trisler Seed Farms, Inc.
UAP Seeds Co.
Wilson Seeds, Inc.
Wyffels Hybrids, Inc.

Appendix C

Optimum Quality Grains, LLC
2000 Export Marketing Agreement
Buyer's Call

Sample Contract

SAMPLE SAMPLE SAMPLE SAMPLE SAMPLE

Contract Number: **#CONTRACT ID**
Originator: **OriginFName OriginLName OriginatorPhone OriginatorCompany**
Program: **Optimum Quality Grains, L.L.C. /Consolidated Grain and Barge**

Optimum Quality Grains, L.L.C.

2000 EXPORT MARKETING AGREEMENT

FOR OPTIMUM® HIGH OIL CORN

Buyer's call

THIS AGREEMENT is made **DATE** between **GrowerDisplayName** (hereinafter "GROWER") and Optimum Quality Grains, L.L.C. (hereinafter "OPTIMUM"), and relates to the production and delivery of OPTIMUM® high-oil com grain (hereinafter "OPTIMUM GRAIN") from certain high-oil hybrid seed com or TC BLEND® seed corn (hereinafter collectively "HOC SEED"). GROWER and OPTIMUM are experienced and knowledgeable in the cultivation of com and business transactions involving com.

1. GENERAL TERMS

a. GROWER shall produce and deliver an "Identity Preserved" crop from HOC SEED purchased from seed companies that are on the 2000 OPTIMUM HOC SEED company list (see Attachment A).

b. GROWER shall produce the highest quality grain possible and meet the specifications in Article 3. GROWER shall take all measures to prevent contaminants during growing and handling OPTIMUM GRAIN, and may not blend with non-OPTIMUM GRAIN.

c. GROWER agrees to sell and deliver 100% of the contracted production of OPTIMUM GRAIN to ELEVATORNAME(hereinafter "ELEVATOR"). All marketing activities and GROWER payments will be handled by the ELEVATOR or a replacement elevator or grain merchandiser designated by OPTIMUM and shall be subject to a separate grain purchase agreement between GROWER and ELEVATOR.

d. GROWER agrees to plant and grow **TOTALQuantity** acres of OPTIMUM GRAIN. Pricing and GROWER compensation for the OPTIMUM GRAIN are in Article 4. If GROWER is unable to perform all terms of this Agreement for any reason, GROWER agrees to promptly notify both OPTIMUM (1-888-707-7648) and ELEVATOR.

e. GROWER will purchase

SEEDCOMPANIES

* Seed company name is required for the Agreement to be valid. If GROWER purchases seed from seed company(s) other than as designated above, whether due to unavailability of seed or GROWER's choice, or is unable to purchase seed in order to perform this Agreement, GROWER agrees to promptly notify OPTIMUM by calling 1-888-707-7648. Neither OPTIMUM nor any seed company designated above guarantees seed availability or sale.

f. GROWER is to request and read the specifications and the complete Purchase Agreement and the Limitation of Warranty and Liability associated with all HOC SEED purchased for use under this Agreement. GROWER agrees to abide by the terms and conditions of the Purchase Agreement.

g. GROWER grants OPTIMUM and/or its appointed agents free and easy access to the fields to inspect, evaluate and monitor the progress and condition of the crop.

h. GROWER agrees not to use any grain storage chemicals - either applied directly to the OPTIMUM GRAIN or to the storage structure in which the OPTIMUM GRAIN is to be stored, and GROWER further agrees to certify compliance with this provision.

i. To minimize risk of cross-pollination, GROWER agrees that he will not plant HOC SEED within 50 feet of any transgenic or GMO (genetically modified organism) corn; and GROWER further agrees to certify his compliance with this provision.

j. For purposes of this agreement, "transgenic or GMO (genetically modified organism) corn" refers to a crop produced from seed containing DNA from another organism; e.g., Bt-derived insect resistance, Roundup Ready ® or Liberty Link ® herbicide resistance, etc.

2. DELIVERY AND STORAGE

a. Delivery is BUYER'S CALL. GROWER shall deliver the dried OPTIMUM GRAIN to ELEVATOR with transportation costs paid by the GROWER. For OPTIMUM GRAIN redirected by OPTIMUM to another facility, that receiving location on behalf of OPTIMUM will pay additional transportation costs.

b. The delivery period(s) shall be the following:

DeliveryWindows

The ELEVATOR will provide a minimum of one week pre-advice of the requested delivery date.

c. GROWER must get written permission from ELEVATOR to change delivery period. In the event of a delay in the designated delivery period caused by ELEVATOR or OPTIMUM, GROWER will be compensated on all priced bushels at a rate of $0.0007 cent per bushel per day from the last day of the delivery period indicated above until the OPTIMUM GRAIN is called. All OPTIMUM GRAIN must be delivered no later than August 31, 2001.

d. GROWER shall not allow or cause any liens or security interests to be placed on the OPTIMUM GRAIN that would prevent the unencumbered delivery of the High Oil Corn grain or that conveys ownership of the crop to anyone other than the GROWER, the ELEVATOR or OPTIMUM.

3. PHYSICAL QUALITY SPECIFICATIONS

OPTIMUM GRAIN shall meet the following specifications, or it shall be subject to the ELEVATOR'S discount schedule or rejection.

a. The specifications for OPTIMUM GRAIN shall be:

Moisture	15.0% Maximum
Test Weight	54.0 lbs. Minimum
BCFM	2.0% Maximum
Damage	3.0% Maximum
Aflatoxin	< 20 ppb
Odor	Cool, sweet and of merchantable quality.
Contamination	For identity preserved handling, no corn grain from other types allowed and meets all U.S. No. 2 Yellow Corn quality standards not listed above.
Blending	OPTIMUM GRAIN blended with any non-OPTIMUM GRAIN will not be accepted.

b. If the moisture exceeds the above limits or has test weight less than the above minimum, the OPTIMUM GRAIN will be subject to rejection or discounts, and drying charges set forth by the receiving ELEVATOR. The following discounts apply for BCFM and damage.

BCFM DISCOUNTS	DAMAGE DISCOUNTS
$0.02 Each 1.0% From 2.1-4.0%	$0.01 Each 1.0% From 3.1-5.0%

c. OPTIMUM GRAIN delivered under this Agreement shall be of merchantable quality, unadulterated and unrestricted from movement in interstate commerce within the meaning of the Federal Food, Drug, and Cosmetic Act, Environmental Protection Agency Tolerances, the United StatesGrain Standards Act and applicable state law.

d. Any individual load of OPTIMUM GRAIN with greater than 20 PPB Aflatoxin, not cool and sweet, not of merchantable quality or rejected as a result of not meeting any of the specifications in this Agreement shall not be accepted and no premium will be paid for oil content. Such load(s) shall be subject to rejection or purchased as yellow corn at the sole discretion of the ELEVATOR. Such load(s) shall not be commingled with other OPTIMUM GRAIN produced by GROWER.

e. The ELEVATOR'S weights and grades shall govern with the exception that GROWER has the right to appeal any grading by having the elevator submit a sample to the Federal Grain Inspection Service (FGIS), at GROWER'S expense, for an official grade.

f. GROWER will provide a representative sample of GROWER'S OPTIMUM GRAIN before delivery if requested by OPTIMUM. OPTIMUM will provide sample bags and sample shipping instructions to the GROWER. OPTIMUM or their representative shall have the right to sample bins of OPTIMUM GRAIN prior to delivery.

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the total number of net bushels of the OPTIMUM GRAIN delivered. GROWER acknowledges that depending upon market conditions, the pricing of OPTIMUM GRAIN may be higher or lower than the local price of generic yellow corn. The GROWER agrees to accept this export price as the final determination in the settlement of the OPTIMUM GRAIN.

PREMIUM SCALE

Less than 6.0% oil*, $0.00 per bushel

6.0% oil $.05 per bu.	7.0% oil $.15 per bu.
6.1% oil $.06 per bu.	7.1% oil $.16 per bu.
6.2% oil $.07 per bu.	7.2% oil $.17 per bu.
6.3% oil $.08 per bu.	7.3% oil $.18 per bu.
6.4% oil $.09 per bu.	7.4% oil $.19 per bu.
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6.9% oil $.14 per bu.	7.9% oil $.24 per bu.

8.0% oil or greater $.25 per bu.

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b. In addition, DUPONT is offering a GROWER profit incentive of $15 per bag on each bag of TC BLEND® seed you buy from participating OPTIMUM HOC seed companies. To qualify for the 2000 DuPont Bonus Program, grower must utilize qualifying DuPont Crop Protection Products on 50% or more of their total corn acres. For additional information on this incentive, call 1-888-6-DUPONT.

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OPTIMUM QUALITY GRAINS, L.L.C.:

By:

_____Date:_____

GROWER:

By:

_____Date:_____
GROWER (signature)

When filling out the information below please PRINT CLEARLY with a ball point pen:

Grower Name: **GrowerDisplayName**

Company Name (if any): **CompanyDisplayName**

Street or box number: **ADDRESS1, ADDRESS2**

City, State, Zip Code, Phone: **CITY, STATE PostalCD, PHONE**

**Complete, legible name and address required for Agreement to be valid.

NON-OBJECTION BY LANDOWNER(S):

By:

_____
LANDOWNER

_____
ADDRESS/TOWN

* Optimum® is a registered trademark of Optimum Quality Grains, L.L.C.
* TC BLEND® is a registered trademark of Optimum Quality Grains, L.L.C.

Version: Version

Attachment A

OPTIMUM® HIGH OIL CORN

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Bo-Jac Hybrid Corn Co.
Brown Seed Farms, Inc.
Burrus Bros. & Assoc. Growers
Cargill
Callahan Seeds
Horizon Seed Genetics
Hughes Hybrids
L. G. Seeds, Inc.
Legend Seeds, Inc.
Lewis Hybrids, Inc.
Mark Seed Company
NC+ Hybrids
Novartis Seeds, Inc.
Patriot Seeds, Inc.
Pfister Hybrid Corn Company

Croplan Genetics
Crows Hybrid Corn Company
DeKalb Genetics Corporation
Diener Seeds, Inc.
Garst Seed Company
Golden Harvest/Garwood
Golden Harvest/Golden Seed Co.
Golden Harvest/JC Robinson Seed Co.
Golden Harvest/Sommer Brothers
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Great Lakes Hybrids
Growmark, Inc.
Gutwein, Fred & Sons, Inc.
Hawkeye Hybrids, Inc.
Hoblit Seed Co.
Hoegemeyer Enterprises, Inc.
Pioneer Hi-Bred International, Inc.
Prime Farm Seeds, Inc.
Producers Hybrids, Inc.
Sand Seed Service
Schlessman Seed Co.
Seed Consultants
Select Seed Hybrids, Inc.
Sieben Hybrids, Inc.
Stewart Seeds, Inc.
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